

BEFORE THE OFFICE OF THE COMMISSIONER OF RAILROADS

STATE OF WISCONSIN

Petition of the Wisconsin Department of Transportation for the Alteration of a Public Crossing of the Wisconsin Central Ltd. Tracks with STH 73 in the Towns of Roosevelt and Ford, Taylor County

9164-RX-521

AMENDED FINAL DECISION

By letter dated July 14, 2003, the Wisconsin Department of Transportation (DOT) filed a petition with the Office of the Commissioner of Railroads (OCR) under §§86.13, 195.28 and 195.29, Stats., for the alteration of a public crossing of the Wisconsin Central Ltd. (WCL) tracks with STH 73 in the Towns of Roosevelt and Ford, Taylor County (crossing no. 697 265D / MP 324.36). The roadway runs along the townline.

Pursuant to due notice, public hearing was held in this matter on September 17, 2003 in Madison, Wisconsin with hearing examiner Douglas S. Wood presiding.

On December 16, 2003, the Commissioner issued a final decision that approved the alteration of the crossing and required the installation of barrier gates in addition to mast-mounted automatic flashing lights. The DOT and the WCL objected to the requirement for barrier gates and requested a rehearing. On January 15, 2004, the Commissioner granted the request for a rehearing. The Commissioner has reconsidered the record in this matter and determined that barrier gates are not required. The Commissioner notes that STH 73 is rural highway with a 55 mph speed limit. Consequently, devices on this highway must meet NCHRP Test Level 3 standards. At present, barrier gates only meet lower Test Level 2 standards. The rehearing has not been held and the Commissioner hereby rescinds the order for a rehearing. This amended final decision approves the alteration of the crossing and requires the installation of cantilevered automatic flashing lights with gates and constant warning time circuitry.

Appearances:

**Parties**

Wisconsin Department of Transportation, Petitioner  
by  
Mark Morrison, PE, Railroad Coordination Engineer  
PO Box 7914  
Madison, Wisconsin 53707-7914

In Support:

Taylor County  
by  
Thomas R. Toepfer, County Highway Commissioner  
PO Box 89  
Medford, WI 54451

In Opposition:

Wisconsin Central Ltd.  
by  
Terry Lee, PE  
Engineer Planning  
1625 Depot Street  
Stevens Point, Wisconsin 54481

#### Findings of Fact

#### THE COMMISSIONER FINDS:

The Wisconsin Department of Transportation proposes to alter the public crossing of the Wisconsin Central Ltd. tracks with STH 73. The DOT plans to reconstruct STH 73 in the 2006 construction season. As part of the project the DOT proposes to replace the existing grade-separated crossing (highway underpass) with an at-grade crossing. The reconstructed roadway would consist of two 12'-wide travel lanes with shoulders. For the reasons stated below, the Commissioner approves the DOT's proposal.

The existing grade separation structure carries the WCL tracks over STH 73. The underpass is subject to frequent flooding. The highway has to be closed about 7 or 8 times each year due to flooding. The closures generally last from a few hours to several days. On some occasions the highway department has had to use a road grader to remove ice from the underpass when the weather turned cold after flooding occurs.

The existing structure, which was built in 1936, has a substandard vertical clearance of 13.09' between the roadway surface and the bottom of the structure. The steel-girders on the structure have been struck by two trucks per year on average, even though the low clearance is posted in advance of the crossing. The minimum allowable vertical clearance for a new structure built with federal funding is 16.25' and the desirable minimum vertical clearance is 16.75'.

Existing STH 73 is 22' feet wide with 6'-wide shoulders and intersects the WCL tracks at an angle of 55° (right-hand forward). The clear roadway width under the bridge is only 17.1'. At the reconstructed crossing the roadway would consist of two 12'-wide travel lanes with 6'-wide shoulders on the outside and on the median side and a 6'-wide raised median between the travel lanes as a supplemental safety measure. The medians would extend 200' from the crossing in each direction and would deter drivers from driving around the gates. The crossing angle would be 55° (right-hand forward). The roadway will ascend to the crossing at grades of 1.78% on the east and 1.55% on the west.

STH 73 carried 860 ADT (average daily traffic) in 1999. The DOT projects STH 73 will carry 1150 ADT in the design year of 2027. The speed limit is 55 mph.

The railroad currently operates 24 to 28 through train movements per day over the STH 73 crossing location at a speed of 50 mph.

A motorist traveling at 55 mph requires a safe stopping distance of 527'. The crossing will be visible from more than 527' in each direction. Assuming a train speed of 50 mph, the motorist traveling at 55 mph needs to see a train when it is 550' from the crossing from a point 527' down the highway. Assuming a train speed of 60 mph, the motorist traveling at 55 mph needs to see a train when it is 650' from the crossing from a point 527' down the highway. The sight distance available to a driver from approaching the crossing at the safe stopping distance will be adequate in the southeast and southwest quadrants, but not in the northeast and northwest quadrants.

The order does not require that the DOT acquire permanent sight easements in the southeast and southwest quadrants to create and maintain a clear view within the required sight triangles because the surrounding is all wetlands. The wetlands do not obstruct the view down the tracks of a driver approaching the crossing. The order **does** require that the DOT acquire permanent sight easements to create and maintain a clear view within the required sight triangles in the northeast and northwest quadrants. The size of the sight triangles is based on a 60 mph train speed.

The exposure factor at this crossing is 20,640 to 24,080. The exposure factor at this crossing will be about 32,200 in the design year assuming 28 train movements per day. The exposure factor equals the product of the number of trains per day and the number of highway vehicles per day, which yields a numerical value for the potential conflicts each day at the crossing.

The DOT's Facilities Development Manual calls for the consideration of a grade separation structure in a rural area when the exposure factor exceeds 75,000 and the highway design speed exceeds 50 mph. The STH 73 crossing has less than 43% of the necessary exposure factor even to consider a grade separation. In addition, the surrounding area is relatively flat and does not lend itself to the construction of a bridge and the water table is very near the surface.

Nonetheless, DOT did evaluate constructing a grade-separated crossing at this location. DOT evaluated both a highway underpass and an overpass. The costs for an underpass are estimated at \$4.4 million with a 16.5' vertical clearance and \$4.3 million with a 16.25' vertical clearance. The costs for an overpass are estimated at \$2.9 million for a bridge. These costs do **not** include wetland mitigation costs, which would be substantial because the area is surrounded by wetlands. The at-grade crossing, including the cost to build the roadway between the theoretical bridge touch down points, would be about \$1.9 million.

The DOT performed a benefit-cost analysis on the various alternatives:

Type of Project	Benefits <sup>1</sup>	Costs	BC Ratio <sup>2</sup>
At-grade crossing <sup>3</sup>	\$1.3 million	\$1.9 million	\$0.66
Highway Underpass <sup>4</sup>	\$1.8 million	\$4.4 million	\$0.32
Highway Underpass <sup>5</sup>	\$1.8 million	\$4.3 million	\$0.33
Highway Overpass	\$1.8 million	\$2.9 million	\$0.49

None of the alternatives have a positive benefit-cost ratio. Nonetheless, the current situation is unacceptable. The benefits are understated for all these alternatives because they do not include the future avoided cost of traffic detours due to flooding or the bridge being struck by a truck. In addition, the costs for all of the grade-separated options are understated because they do **not** include the cost of wetland mitigation.

The STH 73 crossing also does not meet any of the criteria for a grade-separated crossing set forth in the *USDOT Technical Working Group's Guidance on Traffic Control Devices at Highway-Rail Grade Crossings* (November 2002).

The Commissioner concludes that the alteration of the crossing to an at-grade crossing will promote public safety and convenience by providing a safe crossing and removing the existing underpass that floods on a regular basis and has substandard vertical and horizontal clearance.

In order to adequately protect public safety, cantilevered 12" LED automatic flashing lights with gates and constant warning time circuitry and an extended median on each approach are needed because of the exposure factor, train speed and highway speed. Cantilevered signals are needed due to the highway speed.

**Costs.** The project will fund all costs for the at-grade crossing.

#### Ultimate Conclusions on the Issues

#### THE COMMISSIONER CONCLUDES:

1. That the alteration of the STH 73 grade-separated crossing with the Wisconsin Central Ltd. tracks in accordance with the design plans of the Wisconsin Department of Transportation in the Towns of Roosevelt and Ford, Taylor County will promote public safety and convenience.

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<sup>1</sup> Present value dollars for both costs and benefits

<sup>2</sup> The "BC Ratio" is the dollar value of benefits divided by the dollar value of the costs. Benefit and cost figures have been rounded. A value lower than 1.0 indicates the public will receive less than one dollar of benefit for one dollar of cost.

<sup>3</sup> This assumes the crossing will have cantilevered automatic flashing lights with gates and a median on each approach.

<sup>4</sup> This assumes the minimum acceptable vertical clearance of 16.25'.

<sup>5</sup> This assumes the desirable vertical clearance of 16.75'.

2. That in order to adequately protect and promote public safety, it is necessary to install and maintain medians on the approaches to the crossing and cantilevered 12" LED automatic flashing lights with gates and constant warning time circuitry.

3. That it is reasonable that the Wisconsin Central Ltd. bear no part of the cost for the crossing construction.

#### Conclusion of Law

#### THE COMMISSIONER CONCLUDES:

That the jurisdiction of the Office of the Commissioner of Railroads under §§86.13, 195.28 and 195.29, Stats., extends to this matter. Accordingly, the Office enters an order consistent with the findings of fact.

#### Order

#### THE COMMISSIONER ORDERS:

1. That the **Wisconsin Department of Transportation** is authorized to remove the existing grade separation structure carrying STH 73 over the Wisconsin Central Ltd. tracks and to have it replaced with an at-grade crossing in the Towns of Roosevelt and Ford, Taylor County. The removal of the bridge shall be coordinated between the **Wisconsin Department of Transportation and the Wisconsin Central Ltd.**

2. That the **Wisconsin Central Ltd.** shall install and maintain a crossing at-grade of STH 73 with its tracks in accordance with the design plans of the Wisconsin Department of Transportation (which shall include an extended median on each approach) in the Towns of Roosevelt and Ford, Taylor County by **October 15, 2006**.

3. That the **Wisconsin Central Ltd.** shall install and maintain cantilevered 12" LED automatic flashing lights with gates, constant warning time circuitry, and other appropriate appurtenances in accordance with such plans as are filed with and approved by the Office of the Commissioner of Railroads at the crossing of its tracks with STH 73 at-grade in the Towns of Roosevelt and Ford, Taylor County by **October 15, 2006** (Crossing No. 697 265D / MP 324.36).

4. That the **Wisconsin Central Ltd.** shall submit to the Office of the Commissioner of Railroads signal and circuit plans with the cost estimate of its proposed installation and upon completion of the signal project, a detailed statement of the actual cost to the Office and to the Wisconsin Department of Transportation.

5. That the signal installation work herein ordered shall not begin until the district office of the Wisconsin Department of Transportation informs the railroad that they may start such work and such start notice will not be issued until appropriate federal aid or other funding arrangements have been assured. The cost of the new project initiated before the start notice will not be reimbursed with public funds and shall be the responsibility of the railroad.

6. That the **Wisconsin Department of Transportation** shall not open STH 73 at the railroad crossing to unrestricted public use until the installation and activation of the automatic warning devices ordered above.

7. That the **Wisconsin Department of Transportation** shall obtain permanent easements to provide and maintain a clear view within the required sight triangles in the northeast and northwest quadrants (except that part within the railroad right-of-way). That the **Wisconsin Department of Transportation** shall remove any obstructions within those sight triangles (except that part within the railroad right-of-way), including earth embankments, as part of the project. The triangles are formed by connecting the following points: a) the intersection of the centerline of the roadway and the near rail of the tracks; b) a point 560' down the tracks and; c) a point 527' along the roadway from the near rail of the tracks.

8. That the **Wisconsin Department of Transportation** shall install and maintain advance warning signs (sign W10-1) at a distance from the crossing in accordance with the Manual on Uniform Traffic Control Devices on each approach.

9. That the **Wisconsin Department of Transportation** shall install and maintain pavement markings on each approach to the crossing.

10. That the **Wisconsin Central Ltd.** shall bear no part of the cost of the crossing construction, except for any cost assessed to the railroad pursuant to §195.60, Stats., for the investigation of this matter by the Office.

11. That jurisdiction is retained.

Dated at Madison, Wisconsin, \_\_\_\_\_.

By the Office of the Commissioner of Railroads.

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Rodney W. Kreunen  
Commissioner of Railroads